AMENDMENT(S) TO THE CLAIMS:

The following listing of claims will replace all prior versions, and listings, of claims on the application. All claims are set forth below with one of the following annotations.

- (Original): Claim filed with the application.
- (Currently amended): Claim being amended in the current amendment paper.
- (Canceled): Claim cancelled or deleted from the application. No claim text is shown.
- (Withdrawn): Claim still in the application, but in a non-elected status.
- (New): Claim being added in the current amendment paper.
- (Previously Presented): Claim added or amended in an earlier amendment paper.
- (Not entered): Claim presented in a previous amendment, but not entered or whose entry status unknown. No claim text is shown.

1.–3. (Canceled)

4. (Previously Presented) A method comprising:

accepting line-scan data sets at a camera rate from a line-scan camera, each line-scan data set being of an object imaged for a fixed exposure time and moving at a relative speed in relation to the line-scan camera;

accepting a measure of the relative speed between the line-scan camera and the object being imaged by the line-scan camera; and

resampling the line-scan data sets to produce resampled line image data sets at a desired sampling distance, the resampling being a function of the camera rate, the measure of relative speed and the desired sampling distance,

such that the resampling adjusts for variations in relative speed to produce faithfully exposed data,

wherein there is a resampling time corresponding to each resampled line image data set, and wherein the resampling produces a resampled line image data set that is a weighted sum of the accepted line-scan data sets that are partially or completely accepted during the resampling time corresponding to the resampled line image data set, the weightings a function of the relative speed such that a first proportion of a first accepted line-scan data set is weighted less when the relative speed is slower than a second proportion of a second accepted line-scan data set corresponding to when the relative speed is faster,

wherein for a particular resampled line image data set, the weighting of any particular accepted line-scan data set is further a function of the proportion of overlap in the relative motion direction of the accepted with the spatial resampling period of the particular resampled line image data set,

wherein each accepted line-scan data set corresponds to imaging for a fixed exposure time while there is relative motion, such that each accepted line-scan data set has a corresponding distance of relative motion proportional to the relative speed,

wherein the resampling is as if each resampled line image data was obtained by imaging at a variable exposure time, such that each resampled line image data set has a fixed distance of relative motion during the variable exposure time, and

wherein for a particular resampled line image data set, during the fixed distance of relative motion during the variable exposure time, the resampled line image data set includes a contribution from any accepted line-scan data set whose corresponding distance of relative motion overlaps with the fixed distance of relative motion, said contribution weighted by the fraction of the corresponding distance of relative motion in the overlap.

5.–16. (Canceled).

17. (Previously Presented) An apparatus comprising:

a data conditioner to accept line-scan data sets at a camera rate from a line-scan camera, each line-scan data set being of an object imaged for a fixed exposure time and moving at a relative speed in relation to the line-scan camera;

an encoder terminal to accept a measure of the relative speed between the line-scan camera and the object being imaged by the line-scan camera; and

a resampler coupled to the data conditioner and to the encoder terminal, the resampler to resample accepted line-scan data sets to produce sets of line image data at a desired sampling distance, the resampling a function of the camera rate, the measure of relative speed and the desired sampling distance,

such that the resampling adjusts for variations in relative speed to produce faithfully exposed data

wherein there is a resampling time corresponding to each resampled line image data set, and wherein the resampler produces a resampled line image data set that is a weighted sum of the accepted line-scan data sets that are partially or completely accepted during the resampling time corresponding to the resampled line image data set, the weightings a function of the relative speed such that a first proportion of a first accepted line-scan data set is weighted less when the relative speed is slower than a second proportion of a second accepted line-scan data set corresponding to when the relative speed is faster,

wherein each accepted line-scan data set corresponds to imaging for a fixed exposure time while there is relative motion, such that each accepted line-scan data set has a corresponding distance of relative motion proportional to the relative speed,

wherein the resampling is as if each resampled line image data was set obtained by imaging at a variable exposure time, such that each resampled line image data set has a fixed distance of relative motion during the variable exposure time, and

wherein for a particular resampled line image data set, during the fixed distance of relative motion during the variable exposure time, the resampled line image data set includes a contribution from any accepted line-scan data set whose corresponding distance of relative motion overlaps with the fixed distance of relative motion, said contribution weighted by the fraction of the corresponding distance of relative motion in the overlap.

18.–26. (Canceled).

27. (Previously Presented) An apparatus comprising:

a data conditioner to accept line-scan data sets at a camera rate from a line-scan camera, each line-scan data set being of an object imaged for a fixed exposure time and moving at a relative speed in relation to the line-scan camera;

a rate converter to accept a measure of the relative speed between the line-scan camera and the object being imaged by the line-scan camera and produce a web-rate signal related to the accepted measure of relative speed by a scaling factor; and

a resampler coupled to the data conditioner and to the rate converter, the resampler to resample accepted line-scan data sets to produce sets of resampled line image data at a desired sampling distance, the resampling a function of the camera rate, the measure of relative speed and the desired sampling distance,

an image store coupled to the resampler to accept the sets of line image data; and

an interface between a computer system and the rate converter, the resampler, and image store to provide for transferring the resampled line image data sets to the computer system, and for setting the scaling factor and desired sampling distance,

such that the resampling adjusts for variations in relative speed to produce faithfully exposed data,

wherein each accepted line-scan data set corresponds to imaging for a fixed exposure time while there is relative motion, such that each accepted line-scan data set has a corresponding distance of relative motion proportional to the relative speed,

wherein the resampling is as if each resampled line image data was set obtained by imaging at a variable exposure time, such that each resampled line image data set has a fixed distance of relative motion during the variable exposure time, and

wherein for a particular resampled line image data set, during the fixed distance of relative motion during the variable exposure time, the resampled line image data set includes a contribution from any accepted line-scan data set whose corresponding distance of relative motion overlaps with the fixed distance of relative motion, said contribution weighted by the fraction of the corresponding distance of relative motion in the overlap.

28.–33. (Canceled)

34. (Previously Presented) A computer-readable medium with machine readable and executable instructions encoded thereon, the instructions when executed by one or more processors of a processing system causing carrying out a method comprising:

accepting line-scan data sets at a camera rate from a line-scan camera, each line-scan data set being of an object imaged for a fixed exposure time and moving at a relative speed in relation to the line-scan camera;

accepting a measure of the relative speed between the line-scan camera and the object being imaged by the line-scan camera; and

resampling the line-scan data sets to produce resampled line image data sets at a desired sampling distance, the resampling a function of the camera rate, the measure of relative speed and the desired sampling distance,

such that the resampling adjusts for variations in relative speed to produce faithfully exposed data

wherein there is a resampling time corresponding to each resampled line image data set, and wherein the resampling produces a resampled line image data set that is a weighted sum of the accepted line-scan data sets that are partially or completely accepted during the resampling time corresponding to the resampled line image data set, the weightings a function of the relative speed such that a first proportion of a first accepted line-scan data set is weighted less when the relative speed is slower than a second proportion of a second accepted line-scan data set corresponding to when the relative speed is faster,

wherein each accepted line-scan data set corresponds to imaging for a fixed exposure time while there is relative motion, such that each accepted line-scan data set has a corresponding distance of relative motion proportional to the relative speed,

wherein the resampling is as if each resampled line image data was set obtained by imaging at a variable exposure time, such that each resampled line image data set has a fixed distance of relative motion during the variable exposure time, and

wherein for a particular resampled line image data set, during the fixed distance of relative motion during the variable exposure time, the resampled line image data set includes a contribution from any accepted line-scan data set whose corresponding distance of relative motion overlaps with the fixed distance of relative motion, said

contribution weighted by the fraction of the corresponding distance of relative motion in the overlap.

35.–37. (Canceled).